

State of California  
AIR RESOURCES BOARD

**Updated Informative Digest**

**PUBLIC HEARING TO CONSIDER PROPOSED 2004 AMENDMENTS REFINING  
THE CALIFORNIA PHASE 3 REFORMULATED GASOLINE REGULATIONS**

**Sections Affected:** Amendments to sections 2260, 2262, 2262.4, 2262.5, 2262.6, 2262.9, 2263, 2265 (and the incorporated “California Procedures for Evaluating Alternative Specifications for Phase 3 Reformulated Gasoline Using the California Predictive Model”), and 2266.5 of title 13, California Code of Regulations (CCR).

**Background – The Preexisting CaRFG3 Regulations**

The ARB administers the CaRFG3 regulations, which were adopted in June 2000 following a December 1999 Board hearing. As subsequently amended, the CaRFG3 regulations prohibit California gasoline produced with the oxygenate methyl tertiary-butyl ether (MTBE) or other specified oxygenates other than ethanol starting December 31, 2003. The regulations establish CaRFG3 standards applicable the same date for the following eight gasoline properties – sulfur, benzene, olefin, aromatic hydrocarbon, and oxygen contents, the 50 percent distillation temperature, (T50), the 90 percent distillation temperature, (T90), and summertime Reid vapor pressure (RVP). In addition, the regulations establish standards for denatured ethanol sold for use in California gasoline.

The CaRFG regulations allow refiners to use a “Predictive Model” to specify alternative formulations. The Predictive Model is a set of mathematical equations that relate emissions rates of exhaust hydrocarbons, oxides of nitrogen (NO<sub>x</sub>), and potency weighted toxics for four toxic air contaminants (benzene, 1,3-butadiene, formaldehyde, and acetaldehyde) to the values of the eight regulated gasoline properties. An alternative gasoline formulation is acceptable if emissions of hydrocarbons, NO<sub>x</sub>, and potency-weighted toxics resulting from this formulation are no greater than emissions from gasoline having the specifications set forth in the CaRFG3 standards. Currently, most of the gasoline sold in California complies with the CaRFG3 regulations through the use of the Predictive Model.

When gasoline is oxygenated with ethanol, certain characteristics of the resulting blend make it generally infeasible to be transported through pipeline systems. Because of this, ethanol is typically added to gasoline at the terminal or in the delivery truck. The CaRFG regulations allow a refiner to ship non-oxygenated gasoline from the refinery without complying with the CaRFG standards if it is specially formulated to be combined with oxygenate “downstream” from the refinery and the resulting blend will meet all of the CaRFG standards. This allows entities adding oxygen downstream from the refinery to take advantage of the contribution the oxygenate can make to complying with the CaRFG

standards, particularly by diluting the concentration of compounds like benzene. The nonoxygenated blend is called “California reformulated gasoline blendstock for oxygenate blending,” or “CARBOB.”

### **The Amendments Adopted In This Rulemaking**

The Board has adopted a series of relatively minor amendments to the CaRFG3 regulations that clarify current requirements, provide additional flexibility, correct errors, and generally improve enforceability of the regulations. The amendments include the following:

- Revising restrictions on blending CARBOB with other products downstream of the production or import facility. A CARBOB supplier will be allowed to enter into a protocol with the ARB’s Executive Officer permitting the blending of small amounts of transmix into CARBOB that is downstream from its production or import facility. Protocols covering the blending of small amounts of transmix into downstream gasoline are permitted under the preexisting regulations, subject to conditions that are identical to those proposed regarding transmix blending into CARBOB. A CARBOB supplier will also be permitted to blend limited amounts of California gasoline containing ethanol under specific conditions so long as the resulting CARBOB does not contain more than 0.1 percent by weight oxygen; the gasoline will have to meet the applicable cap limits for all other properties other than oxygen content. In addition, the Executive Officer will be allowed to develop protocols for the blending of California gasoline or other CARBOB into CARBOB for other situations.
- Changing the documentation requirements for denatured ethanol being supplied from one party to another. The amendments give an importer of denatured ethanol an option to having to provide documentation identifying the name, location and operator of the facility or facilities at which the ethanol was produced and at which the denaturant was added to the ethanol. Under the option, the documentation will have to identify the date and time the ethanol was supplied and state that the supplier maintains a list of all the facilities at which the ethanol was produced and at which the denaturant was added to the ethanol.
- Eliminating a requirement that CARBOB importers sample and test each batch of imported CARBOB. A requirement that CARBOB producers sample and test each batch was eliminated in 2000, and staff believes a blanket requirement for importers of CARBOB is no longer necessary. Importers of either CARBOB or California gasoline will still have to sample and test for any properties for which an averaging compliance option is being used.
- Revising a provision designed to make gasoline produced in the Bay Area and received at a Southern California marine terminal in March subject to the Southern California March 1 start of the RVP season rather than the April 1 start date for Bay Area production and import facilities. Under the amendments, such gasoline will not longer be characterized as imported.

- Correcting the “California Procedures for Evaluating Alternative Specifications for Phase 3 Reformulated Gasoline Using the Predictive Model,” which is incorporated by reference in the regulations, to reflect the Board’s original intent that gasoline with an oxygen content within the range of 3.3 to 3.7 weight percent will be evaluated at a single oxygen content of 3.5 weight percent.
- Making various other minor clarifications of and improvements to the CaRFG3 regulations.

### **Comparable Federal Regulations**

The United States Environmental Protection Agency (U.S. EPA) administers the federal RFG regulations, which currently apply to about 80 percent of California’s gasoline and are contained in 40 CFR §§ 80.40 and following. One of the requirements for federal RFG is that it contain at least 2.0 weight % oxygen year-round. California, on the other hand, requires a minimum oxygen content of 1.8 wt.% only during the wintertime in Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial counties. The use of oxygen in gasoline reduces emissions of carbon monoxide (CO) from the existing vehicle fleet, and ambient CO concentrations are the highest in the winter. Unhealthy levels of CO are no longer experienced in California outside the wintertime oxygenate areas. Except for the wintertime requirements, producers and importers of California gasoline may use the Predictive Model to reduce or eliminate oxygen as long as the combined specifications for the gasoline achieve an equivalent emissions performance for hydrocarbons, NO<sub>x</sub>, and potency-weighted toxics.

California has asked U.S. EPA to exercise its authority to waive the minimum oxygen requirement, but in June 2001 the agency denied the state’s request. The State of California subsequently challenged the U.S. EPA’s denial of the waiver request; and in July 2003, the Ninth Circuit Court of Appeals vacated this denial and directed U.S. EPA to reconsider California’s waiver request giving with full consideration of the impacts on California’s ability to meet federal standards for ozone and particulate matter. The federal agency has taken no action to date.